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## Contaminants of Concern (COC) At the Ashland Harbor Site

The COC originate from Coal Tars which were residuals from the manufactured gas plant (MGP) process that used coal as a feedstock.

Coal Tars are a complex mixture of thousands of organic compounds of

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varying molecular weight, chemical makeup, and  
toxicities to aquatic  
organisms.

The COC are generally 1) "regulatory" chemicals, i.e  
demonstrates toxic  
effects to humans and aquatic life, 2) have approved  
analytical methods,  
and 3) have been found at a number of investigated  
MGP sites based on  
the nature and characteristics of process residuals.  
The primary  
chemical groups of coal tar COC and examples of  
compounds in those  
groups are:

Polycyclic Aromatic  
Hydrocarbons (PAHs) Volatile Organic  
Compounds (VOCs) Phenolic Compounds  
Anthracene Benzene Phenol  
Benzo(a)pyrene Ethylbenzene 2-Methylphenol  
Benzo(k)fluoranthene Toluene 4-Methylphenol  
Chrysenes Xylene 2,4-Dimethylphenol  
Naphthalene  
Phenanthrene

In addition, coal tars may contain heterocyclic  
aromatic organic  
compounds containing nitrogen (quinolines,  
carbozoles), sulfur  
(thiopenes), or oxygen (dibenzofurans) as well as  
cresols and many  
alkyl-substituted PAH compounds. Studies suggest  
that the environmental  
impacts of heterocyclic compounds, even if present  
in relatively low  
concentrations, may exceed that of PAHs. Their fate  
and effects need to  
be considered in environmental studies.  
Sediments with coal tar oils associated with them  
will act as toxic  
reservoirs that will persist for years with long  
term organic  
contaminant releases over time scales measured in  
generations.

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